

REMARKS

Prior to entry of this amendment, claims 1-18 are pending in the subject application.

By this amendment, claim 10 is amended and claims 19 and 20 are added. No new matter is added. Support for the amendment to claim 10 and the subject matter of claims 19 and 20 may be at least found in paragraphs [0039], [0040] and/or [0047] of applicants' originally filed specification. Claims 1-20 are presented to the Examiner for consideration. Claims 1, 15 and 20 are independent.

Applicants appreciate the Examiner's acknowledgement of applicants' claim for foreign priority and receipt of a certified copy of the priority document.

Applicants further appreciate the Examiner's acceptance of the drawings filed on January 15, 2004.

Applicants further appreciate the Examiner's consideration of applicants' Information Disclosure Statements filed June 21, 2004, July 11, 2004 and March 3, 2005.

A. Introduction

In the outstanding Office action, the Examiner rejected claims 1-10 and 13-18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,713,673 to Nemeto et al. ("the Nemeto et al. reference") and rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the Nemeto et al. reference in view of U.S. Patent No. 6,582,058 to Yi et al. ("the Yi et al. reference").

B. Asserted Anticipation Rejection of Claims 1-10 and 13-18

In the outstanding Office action, the Examiner rejected claims 1-10 and 13-18 under 35 U.S.C. § 102(b) as being anticipated by the Nemeto et al. reference. The rejection is respectfully traversed for at least the following reasons.

Applicants submit that the Nemoto et al. reference fails to disclose or suggest the combination of features recited in each of independent claims 1 and 15 including, *inter alia*, the “a surface of the ink is vibrated by a pressurized wave generated by the laser beam, and a vibration causes an ink droplet to be expelled through the ink ejection hole” features of claim 1 and the “expelling an ink droplet from the surface of the ink by the vibration of the surface of the ink” features of claim 15.

Pages 3 and 4 of the Office action state that the element identified by reference numeral 32 of the Nemoto et al. reference corresponds to the “vibration” features of independent claims 1 and 15. Applicants respectfully disagree.

The reference numeral 32 of the Nemoto et al. reference identifies vaporized dye (col. 2, line 4). More particularly, the Nemoto et al. reference explicitly discloses that liquefied dye 22 that is vaporized into vaporized dye 32 (col. 2, lines 1-5). Applicants submit that persons of ordinary skill in the art appreciate the effect of energy, i.e., temperature and pressure, on substances, e.g., dye, and thus, also appreciate the differences between the solid, liquid and vapor phases of a substance. Thus, those of ordinary skill in the art at the time of applicants’ invention would, and will, appreciate that vaporized dye 32 does not correspond to “an ink droplet”, as recited in independent claims 1 and 15.

Applicants further submit that the Nemoto et al. reference fails to disclose or suggest, in any way, that the process of vaporizing the liquefied dye 22 into the vaporized dye 32 inherently involves “expelling an ink droplet from the surface of the ink” or “vibration of the surface of the ink,” as recited in applicants’ claim 15 and as similarly recited in applicants’ claim 1. Applicants note that, as set forth in Section 2112 of the MPEP, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient.

In addition, applicants submit that, as recited, for example, in paragraph [0040] of applicants' originally filed specification, an ink-jet printhead or a method of expelling ink according to one or more aspects of the invention recited in each of claims 1 and 15 is at least advantageous by: (1) enabling a higher energy efficiency to be achieved in relation to known ink-jet printheads and expelling methods; and (2) enabling a higher expelling frequency of ink-droplets and thus, enabling higher printing speeds by not waiting for the ink to boil and instead, expelling liquid droplets.

For at least these reasons, applicants submit that the Nemeto et al. reference fails to disclose or suggest all the features of independent claims 1 and 15, as well as all the features of claims 9-10, 13, 14 and 16-18, which directly or indirectly depend from one of claims 1 and 15. It is respectfully requested that the rejection be withdrawn.

C. Asserted Obviousness Rejection of Claims 11 and 12

In the outstanding Office action, the Examiner rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the Nemeto et al. reference in view of the Yi et al. reference. The rejection is respectfully traversed for at least the following reasons.

As discussed above, the Nemeto et al. reference fails to disclose or suggest all the features of claim 1, from which claims 11 and 12 depend. Applicants submit that the Yi et al. reference also fails to overcome the deficiencies of the Nemeto et al. reference, as applied to claim 1. For at least these reasons, applicants respectively submit that the combination of the Nemeto et al. reference and the Yi et al. reference fails to disclose or suggest all the features of claims 11 and 12. It is respectfully requested that the rejection be withdrawn.

D. New Claims 19 and 20

As discussed above, applicants hereby add new dependent claim 19 and new independent claim 20. Dependent claim 19, which depends from claim 1, is patentable over the applied

references for at least the reasons discussed above with regard to claim 1. Independent claim 20 is patentable over the applied references at least because the applied references fail to disclose or suggest the "controllably energizing ink in an ink chamber to generate a pressurized wave in the ink and to cause a surface of the ink to vibrate such that an amplitude of a wave on the surface of ink increases and to cause a liquid ink droplet to be expelled away from the surface of the ink before the ink reaches a boiling state features of claim 20.

E. Conclusion

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

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